

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A method of tracing a route between an origin node and a target node of a TCP/IP data network, the method ~~consisting~~ comprising of

defining a route tracing function having a start distance and an end distance;

[[• ]] ~~stopping the recursive processing of the function if the start and end difference differ by one unit,~~

[[• ]] sending a message to said target node, with a ~~time to live~~ Time To Live setting equal to an intermediate value between the start and end distances;

[[• ]] receiving a response ~~and;~~

[[• ]] if said response comes from the target node, storing it in ~~the~~ a list of known nodes and executing the tracing function recursively with the start distance and ~~the~~ a target node distance as parameters;

[[• ]] if said response is a Time To Live Exceeded message ~~coming~~ from an intermediate node in said list of known nodes, executing the tracing function recursively with ~~the~~ an intermediate node distance and said end distance as parameters, ~~and;~~

[[• ]] if said response is a Time To Live Exceeded message ~~coming~~ from an intermediate node that is not in said list of known nodes, storing said intermediate node in the list of known nodes and executing the tracing function recursively, a first time with the start distance

and the intermediate node distance as parameters and a second time with the intermediate node distance and the end distance as parameters, ~~and;~~

[[• ]]initially executing said route tracing function with a start distance equal to 0;  
and

stopping the recursive processing of the function if the start and end distance differ by one unit;

wherein the Time to Live Exceeded response from the intermediate node is sent if the message exceeds the Time To Live setting.

2. (currently amended): A method according to claim 1, wherein said intermediate value ~~is equal to the~~ equals an average of the start and end distances.

3. (currently amended): A method according to claim 1, wherein the end distance is initially fixed at twice ~~the~~ an average of ~~the~~ distances of ~~the~~ nodes in said list of known nodes.

4. (original): A method according to claim 1, wherein said time to live is stored in a Time To Live field conforming to RFC 791.

5. (currently amended): A method according to claim 1, wherein said message and said response conform to ~~the~~ ICMP defined by RFC 792.

6. (currently amended): ~~Software including means for implementing the method~~  
~~according to claim 1.~~ A computer-readable medium capable of tracing a route between an origin  
node and a target node of a TCP/IP data network having computer-executable instructions for  
performing steps comprising:

defining a route tracing function having a start distance and an end distance;

sending a message to said target node with a Time To Live setting equal to an  
intermediate value between the start and end distances;

receiving a response;

if said response comes from the target node, storing it in a list of known nodes and  
executing the tracing function recursively with the start distance and a target node distance as  
parameters;

if said response is a Time To Live Exceeded message from an intermediate node in said  
list of known nodes, executing the tracing function recursively with an intermediate node  
distance and said end distance as parameters;

if said response is a Time To Live Exceeded message from an intermediate node that is  
not in said list of known nodes, storing said intermediate node in the list of known nodes and  
executing the tracing function recursively, a first time with the start distance and the intermediate  
node distance as parameters and a second time with the intermediate node distance and the end  
distance as parameters;

initially executing said route tracing function with a start distance equal to 0; and

stopping the recursive processing of the function if the start and end distance differ by  
one unit;

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. APPLN. NO.: 10/090,748

ATTY. MATTER NO.: Q68801

wherein the Time to Live Exceeded response from the intermediate node is sent if the message exceeds the Time To Live setting.